



DEPARTMENT OF THE NAVY
BUREAU OF MEDICINE AND SURGERY
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IN REPLY REFER TO

BUMEDINST 1553.2
BUMED-53
18 Mar 97

BUMED INSTRUCTION 1553.2

From: Chief, Bureau of Medicine and Surgery

Subj: STUDENT TESTING AND EVALUATION

Ref: (a) BUMED Curriculum Development Guide, Technical Training
(b) Handbook for Testing in Navy Schools (NPRDC SR 83-2)
(c) BUMEDINST 1553.1
(d) BUMEDINST 1540.1

Encl: (1) Sample Student Evaluation Plan

1. Purpose. To provide guidance and establish standards for evaluating the learning of students in "A," "C," and "G" schools and other courses where student performance is tested and graded.

2. Cancellation. HSETCINST 1553.5.

3. Definitions

a. Academic Review Board. A structured forum to facilitate student academic performance and deter student failure by assessing the factors related to deficient student performance and recommending appropriate action.

b. Clinical Evaluation. Evaluation of student performance in the portion of a course that occurs in an actual job setting.

c. Course. An ordered arrangement of subject matter designed to train personnel in the knowledge, skills, attitudes, and techniques required in the performance of Navy tasks in designated areas of specialization, such as an "A," "C," or "G" course.

d. Course Director. A person designated by the commanding officer or officer in charge of a training activity as responsible for the management of instruction and curriculum matters in a specific course at that training activity.

e. Criterion-referenced Evaluation. A means of determining a student's learning achievement in relation to a fixed standard based on the learning objective.

f. Evaluation. The process of interpreting the results of measurement data (e.g., scores on performance checklists, written tests, and rating scales).

g. Laboratory Evaluation. Evaluation of a student's performance in a simulation of the job setting.

18 Mar 97

h. Measurement. The assignment of number or values to events according to a defined rule.

i. Performance. Observable student behavior intended to demonstrate achievement of learning objectives.

j. Performance Test. A sample work situation in which personnel being tested perform a practical task that requires them to demonstrate how well they have achieved the skills required for performance on their job. For some jobs this could be a written test if designed as a job sample for personnel whose responsibilities involve paper procedures.

k. Phase I and Phase II. Refers to a pipeline course in which the didactic portion of training is completed at one school location, and the clinical or practical portion of training is completed at dispersed follow-on sites. Phase I is designated as a type "G" course in the Catalog of Navy Training Courses (CANTRAC).

l. Standard Level of Performance. The level of student proficiency required by the learning objectives.

m. Student Evaluation Plan (SEP). A comprehensive document containing specific information about how students will be tested, remediated, retested, evaluated, and graded in a course. The SEP also contains specific criteria for academic probation and referral to an Academic Review Board. The SEP must be approved by the training program manager as part of the required documentation for each course.

n. Test Reliability. The extent to which a test gives a consistent and precise measure of behavior over a number of trials.

o. Test Validity. The extent to which a test is a true measure; the extent to which it distinguishes between those who have mastered the training goals and those who have not; the degree to which the test content measures what is relevant to job performance and parallels the curricular objectives in content.

p. Training Program Manager. A headquarters staff member who manages or coordinates all aspects of an assigned group of schools and courses.

q. Unit. A major subdivision of a course.

r. Written or Oral Test. A test in which students demonstrate their capabilities by written techniques or by oral answers to questions posed by the instructor. These types of tests usually are not performance tests, and thus are usually measures of knowledge and attitudes rather than skills.

4. General Policies

a. The function of student evaluation in "A," "C," and "G" schools is to determine if students have the attitudes and knowledge and can perform the tasks required by the job for which they are being trained.

b. The evaluation of all students at all sites conducting a course shall follow the approved SEP.

c. Student evaluation shall be criterion-referenced rather than norm-referenced. That is, student achievement shall be measured and evaluated against objective standards stated by the learning objectives and the SEP, rather than measured against the performance of other students.

d. Evaluation of a student shall include a variety of assessments to ensure an adequate sample of student achievement is obtained.

e. Student evaluation practices shall be consistent with references (a) through (d).

5. Uses of Student Evaluation

a. To provide quality control of personnel entering a rating or an NEC.

b. To measure student achievement of learning objectives.

c. To identify the need for instructional remediation.

d. To provide feedback to students for improved learning.

e. To provide feedback for indicated curriculum revision.

f. To rank students on the basis of final course grades.

g. To determine students' letter grades or grade point averages for courses with college affiliation.

6. Measuring Student Achievement. References (a) and (b) are reference documents for the design of testing instruments appropriate to the learning objectives. Appropriate test item formats should be chosen to correspond to the learning level and content type of the objectives being tested. The rule of thumb is written tests are appropriate for objectives that require knowing or understanding information; both written and performance tests may be appropriate for objectives that require using or applying categories, rules, and principles; and

performance tests are appropriate for objectives that require using or applying procedures. Written and performance tests should be practical: constructing the test should be within the capability of the organization; the test should be capable of administration without confusion; and it should be easy to score with precision. Reference (b) provides detailed information about designing and analyzing both written and performance tests.

a. Performance Tests

(1) Checklists and rating scales must be developed for evaluating student performance or products produced by students and shall be incorporated in the SEP. The same checklists and rating scales shall be used by all sites conducting the same course.

(2) Performance tests should include measurement of personal qualities and attitudes important to performance on the job.

(3) Checklists and rating scales should be analyzed periodically for reliability and validity and revised as necessary.

(4) Instructors should be trained frequently in the use of specific checklists and rating scales to ensure scoring is consistent among instructors.

b. Written and Oral Tests

(1) All test items must be based on learning objectives or learning steps.

(2) Each test item must be reviewed to assure it reflects the learning objectives, agrees with content presented in the lesson topic guide and student handouts, and contains tests significant rather than arbitrary or trivial information.

(3) A test item bank will be maintained with a number of effective test items for each objective.

(4) Tests will be varied frequently to provide a measure of security for the tests.

(5) Tests should be constructed to permit scoring by subsection so achievement of specific objectives or content areas can be determined.

7. Remediation and Retest

a. The SEP shall state the criteria for:

(1) Retest when a student has failed a test.

(2) Assignment to academic probation or mandatory study.

(3) Referral to an academic review board. See reference
(d) for composition and functions of academic review boards.

b. Retest on quizzes and minor tests is at the option of the training activity, but is not required if the same content will be tested later on a major or unit test. Whether or not retest on minor tests is permitted or required, students should be given feedback on the content they missed so they can prepare for major tests.

c. A student who fails a unit test or other major test should be given a specific assignment to guide study and remediation before retest, and sufficient time to complete the study and remediation.

d. For knowledge tests, a retest should be an alternate form of the original test, or alternate forms of the items missed.

e. When a student passes a retest, the grade awarded and recorded will be the minimum passing grade for that test.

8. Clinical Evaluation. Student performance in the clinical portions of a course will be evaluated by means of performance tests specific to the clinical learning objectives. Student evaluation in clinical rotations will be frequent enough to enable the student to learn and improve from feedback and to ensure an adequate sample of the student's performance is observed.

9. Grading

a. At a minimum, a student must achieve 70 percent correct to pass a written test. The SEP for a particular course may specify a higher standard for certain portions of the course or for the final course grade. The standard for passing a laboratory evaluation is determined by the requirement of the learning objective, but generally the student must pass all required steps in the procedure and at least 70 percent of all other steps.

b. Unit grades and final grades are determined according to the following grading scale, based on the course objectives.

(1) Outstanding (94-100). The student has mastered all terminal objectives and follows prescribed procedures in all details. Equipment and tools are always used correctly. All safety precautions are carefully observed. Work is done expeditiously and with a high level of proficiency. The student requires no assistance from the instructor after initial instruction.

(2) Superior (86-93). The student has achieved all terminal objectives at the standard level and follows prescribed procedures in all details. The completed work is of high quality. Equipment and tools are used correctly. All safety precautions are observed. Work is done within time limits. Little assistance from the instructor is required after initial instruction.

(3) Satisfactory (75-85). The student has passed all terminal objectives and follows prescribed procedures in most details. The completed work is of acceptable quality. Equipment and tools are used correctly. All life-threatening safety precautions are observed. Work is usually done within time limits. The student requires occasional help from an instructor after initial instruction.

(4) Pass (70-74). The student has passed all terminal objectives, but has some difficulty following prescribed procedures. The completed work is usually of acceptable quality. Equipment and tools are usually used correctly. All life-threatening safety precautions are observed. Work is sometimes not completed within time limits. Frequently requires help from an instructor.

(5) Fail (0-69). The student has failed to pass all terminal objectives.

c. The following grading scale may apply for unit grades as well as for laboratory evaluations, clinical evaluations, quizzes, homework, problem sets, worksheets, and training exercises, or other evaluation activities as specified in the SEP.

(1) Pass. The student has achieved all terminal objectives or has achieved the objectives for this portion of the training.

(2) Fail. The student has failed to achieve all terminal objectives or has failed to achieve the objectives for this portion of the course.

10. Student Evaluation Plan. Each course and each Phase II portion of a training pipeline must have an approved SEP, which

defines how all students will be evaluated and graded. The purpose of the plan is to define how all students will be evaluated and graded, and to ensure students at all training sites are evaluated in the same way. All schools conducting the course must adhere to the SEP.

a. Content. The plan specifies the major evaluation activities required and the weight given to each in determining unit and final grades. The plan also includes performance checklists for laboratories and clinical rotations. The following are some of the activities that may be included in determining unit and final grades:

- (1) Performance tests.
- (2) Written tests.
- (3) Oral tests.
- (4) Oral boards.
- (5) Laboratory records.
- (6) Written reports and papers.
- (7) Oral presentations.
- (8) Problem sets.
- (9) Homework.
- (10) Research activities.
- (11) Worksheets.
- (12) Field reports.
- (13) Case studies.
- (14) Projects.
- (15) Training exercises.
- (16) Clinical rotations.

b. Format. A sample SEP is shown in enclosure (1). Instructions for completing each section of the SEP are as follows:

(1) Section I: Course Title. State the course title as listed in CANTRAC, followed by the course identification number (CIN).

(2) Section II: Approval Date. Enter the date the training program manager approved this SEP. (Leave blank when submitting plan for approval.)

(3) Section III: Methods and Procedures for Determining Unit Grade. For each unit, list and describe the evaluation activities and the weight given to each in determining final unit grade.

(4) Section IV: Methods and Procedures for Determining Clinical Grade. List and describe the evaluation activities and the weight given to each in determining clinical grade.

(5) Section V: Methods and Procedures for Determining Final Course Grade. List the elements and the weight given to each in determining final course grade.

(6) Section VI: Remediation and Retest Policy. State the criteria for permitting a retest, the number of retests permitted before referral to an academic review board, and the total number of test failures permitted. State criteria for placing a student on academic probation or assigning mandatory study.

(7) Section VII: College or University Affiliation. Name the college or university, if any, with which the course is affiliated. List the semester hours or quarter hours of credit awarded by the college or university. Describe the method, if any, for determining letter grades submitted to the college or university.

(8) Section VIII: American Council on Education (ACE) Recommendations for Credit. List the credits recommended by ACE in its most recent evaluation of this course, and state the level at which the credits are recommended (i.e., vocational certificate, lower division baccalaureate, or upper division baccalaureate).

(9) Section IX: Student Awards. List awards students are eligible to receive at graduation, and the selection criteria for each. Awards may vary by school site, if the course is conducted at more than one location.

(10) Section X: Accreditation. List the agencies that have accredited the program and the years of accreditation.

(11) Appendix: Performance Checklists. Append copies of all performance checklists and rating scales for laboratories and clinical rotations.

11. Responsibility

a. Instructors are responsible for carrying out the SEP fairly, objectively, and consistently to ensure only qualified students are awarded a passing grade.

b. Course directors and academic directors are responsible for ensuring approved SEPs are implemented and students are informed of how they will be evaluated and graded.

c. The training program manager for each course is responsible for approving SEPs and inspecting the schools to ensure plans are implemented as approved.



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SAMPLE STUDENT EVALUATION PLAN

I. COURSE TITLE

Administrative Managing Technician B-321-9876

II. APPROVAL DATE

February 1997

III. METHODS AND PROCEDURES FOR DETERMINING UNIT GRADES

For units 1 through 3, the unit grade is the average of the written test scores for that unit. Performance checklists (PCLs) are scored on a pass or fail basis and all must be passed for the student to continue in the program. Unit 4 is graded on a pass or fail basis determined by PCLs. Unit 5 is the clinical rotation, explained in section IV below.

<u>Unit</u>	<u>Number of tests</u>	<u>Number of PCLs</u>
1	5	1
2	6	3
3	5	5
4	0	4
5	See section IV	

IV. METHODS AND PROCEDURES FOR DETERMINING CLINICAL GRADES

The components of the clinical grade (Unit 5) are as follows:

Case worksheets	25 percent
Senior project	20 percent
Clinical competency exams	55 percent

V. METHODS AND PROCEDURES FOR DETERMINING FINAL COURSE GRADE

Components of the final course grade are as follows:

Average of unit grades (units 1 - 3)	40 percent
Clinical grade	60 percent

VI. REMEDIATION AND RETEST POLICY

Any student who fails a test is counseled, given a remedial assignment, and retested. Students who fail a retest are referred to a academic review board. Students whose cumulative class average is below 75 are placed on academic probation and assigned to mandatory study until their average rises to 75 or above.

BUMEDINST 1553.2
18 mar 97

VII. COLLEGE OR UNIVERSITY AFFILIATION

None.

VIII. AMERICAN COUNCIL ON EDUCATION RECOMMENDATIONS FOR
CREDIT

6 semester hours at the lower division baccalaureate level:

Principles of Management Technology	3 semester hours
Clinical Application of	3 semester hours
Administrative Technology	

IX. ACCREDITATION

The program was accredited by the Association of
Administrating and Managing Technologists in 1995 for a
5-year period.